

**REMARKS**

Claims 1-15 are pending in the present application. Claims 2, 6-8 and 10-14 are withdrawn from consideration. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

The applicants note with appreciation the acknowledgement of the claim for priority under section 119 and the notice that all certified copies of the priority documents have been received.

The applicants acknowledge and appreciate receiving a copy of the form PTO-1449 submitted with the Information Disclosure Statement filed on July 23, 2003 on which the Examiner has initialed all listed items.

The Examiner has objected to the Title of the Invention as being not descriptive. A new title has been provided hereinabove as follows: COMPOSITE INTEGRATED CIRCUIT DEVICE HAVING RESTRICTED HEAT CONDUCTION. If the Examiner still believes the title to be not descriptive, Applicants request that the Examiner suggest a more descriptive title.

Claims 1, 3, 4, 5, 9, and 15 stand rejected under 35 USC 103(a) as being allegedly unpatentable over Matsuzaki et al., U.S. Patent No. 5,264,730 (hereinafter "Matsuzaki"). The rejection is respectfully traversed.

Applicants first note that the Examiner, in making a rejection under 35 USC 103(a) based on a single reference, is necessarily admitting that the applied reference fails to teach or suggest all the claimed elements.

With regard to claim 1, the Examiner states that the functional features recited therein have been given little weight during examination. Applicants note that it is well established that functional features are entitled to patentable weight. Applicants further note that the claims are not directed to a product by process, but rather to a device as claimed including the claimed

structure and claimed functional features associated, for example, with temperature restriction such as the temperature-restricted element having restriction in operating temperature which temperature arises based on the generation of heat while running of, for example, the claimed heater element. Such patentable functional features should not be confused with product by process recitations.

Notwithstanding the above discussion regarding the patentable weight of functional features, the claimed invention can be distinguished from the applied references based on structural differences. For example, in the claimed invention, a heater element that generates heat while running is mounted *on a first area* of the top surface of the substrate and a temperature-restricted element that has a restriction in operating temperature is mounted on *a second area* of the top surface of the substrate. A seat member of the claimed lead frame includes *a hollow member corresponding to a given area* of the top surface of the substrate. The claimed given area includes at least a portion of an intermediate area that is located between the first area and the second area and *excludes the second area*. It is important to note that by excluding the second area, the seat member of the lead frame is present in the second area, e.g. under the temperature-restricted element, giving the temperature-restricted element the benefit of the increased heat conducting properties of the metal of the seat member to conduct heat away while the hollow member prevents heat from being conducted into the second area from the heater element.

In stark contrast, Matsuzaki fails to teach or suggest, *inter alia*, the claimed given area, for example, that excludes the second area. As shown in Figures 1(a) and 1(b) of Matsuzaki for example, stage 21 of lead frame 2 is configured so that the most of the bottom surface of the substrate 1 is exposed to the mold package 6. The primary aim of Matsuzaki is to improve the adhesion between the substrate and the mold package and not to restrict, for example, the heat

conduction from heater elements to temperature-restricted elements as in the present invention. Accordingly, Matsuzaki is concerned with exposing as much of substrate 1 as possible to the mold package 6, as noted. In accordance with the teachings of Matsuzaki, heat dissipation from temperature restricted elements is inhibited or suppressed thus teaching away from the claimed invention which maintains heat dissipation from the temperature-restricted element by excluding the second area from the given area of the hollow member.

Accordingly, for at least the reasons set forth hereinabove, a *prima facie* case of obviousness has not properly been established in that the applied reference fails to teach or suggest all the claimed features as required. It is respectfully requested that the rejection of independent claim 1 be reconsidered and withdrawn.

Claims 3, 4, 5, 9, and 15, by virtue of depending from independent claim 1, are allowable for at least the reasons set forth hereinabove. It is respectfully requested therefore that the rejection of claims 3, 4, 5, 9, and 15 be reconsidered and withdrawn.

Claims 1, 3, 4, 5, 9, and 15 stand rejected under 35 USC 103(a) as being allegedly unpatentable over Hirakawa et al., U.S. Patent No. 6,484,708 (hereinafter "Hirakawa"). The rejection is respectfully traversed.

Applicants again note that, as in the rejection above, the Examiner, in making a rejection under 35 USC 103(a) based on a single reference, is necessarily admitting that the applied reference fails to teach or suggest all the claimed elements.

With regard to claim 1, the Examiner again states that the functional features recited therein have been given little weight during examination. Applicants again note that it is well established that functional features are entitled to patentable weight.

In stark contrast with the claimed structure as outlined in the discussion noted above, Hirakawa fails to teach or suggest, *inter alia*, the claimed hollow member and the claimed given

area, for example, that excludes the second area. As shown in Figure 4 of Hirakawa for example, depressing portions 3b are formed on the reverse side surface 3a of the heat sink 3. It is important to note that depressing portions 3b do not penetrate the heat sink 3 and thus, assuming arguendo that heat sink 3 amounts to the claimed lead frame, may give rise to the problems associated with conventional structures, e.g. heat may be conducted from heat-generating elements to temperature-restricted elements that may be mounted on circuit board 4.

Accordingly, for at least the reasons set forth hereinabove, a *prima facie* case of obviousness has not properly been established in that the applied reference fails to teach or suggest all the claimed features as required. It is respectfully requested that the rejection of independent claim 1 be reconsidered and withdrawn.

Claims 3, 4, 5, 9, and 15, by virtue of depending from independent claim 1, are allowable for at least the reasons set forth hereinabove. It is respectfully requested therefore that the rejection of claims 3, 4, 5, 9, and 15 be reconsidered and withdrawn.

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



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